



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/383,560	08/26/1999	RICHARD P. RUSIN	54989USA6A	6747

32692 7590 09/10/2003

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

LEWIS, RALPH A

ART UNIT	PAPER NUMBER
----------	--------------

3732

DATE MAILED: 09/10/2003

20

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/383,560Applicant(s)
RusinExaminer
Ralph LewisArt Unit
3732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 20, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55-79 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 55-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

Art Unit: 3732

Rejections based on Prior Art

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 55-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oden et al (5,217,375) in view of Rostvall '871 (WO 98/36871).

Oden et al teach the providing of a crystalline ceramic body of "highly pure" Al_2O_3 (column 5, line 19) having a density preferably over 99.5% (column 5, line 13) which is milled to the desired dental prosthesis shape (column 5, line 6). Oden et al suggest that the dental blank be presintered before the milling and then finally sintered after the milling (column 5, lines 5-8). In contrast, applicant's claims require that there be no sintering of the ceramic body once the ceramic body has first been provided.

The ordinarily skilled artisan would readily recognize that there are three options to shaping any ceramic body (1) shaped before sintering, (2) shaped after sintering (applicant) or (3) shaped somewhere in the middle of the sintering process (Oden et al). The ordinarily skilled artisan would readily recognize that there are advantages and disadvantages to each, if the ceramic body is shaped while it is soft prior to sintering, then the shaped body will shrink. On the other hand, if the ceramic body is shaped after sintering, it will not shrink, but it is hard and

Art Unit: 3732

difficult to shape. If applicant disputes that the ordinarily skilled artisan lacks such basic knowledge, then applicant is requested to do so clearly on the record.

Oden et al do not explicitly disclose why the “highly pure” Al_2O_3 dental ceramic blank is sintered after milling (thus requiring the complicated step of determining the amount of shrinkage and milling the prosthesis of a size to account for the shrinkage (note column 4, line 65 - column 5, line 4)), but one of ordinary skill in the art would have readily recognized and appreciated that the machining is done prior to full sintering because after final sintering the blank is generally too hard to be machined effectively. Rostvall '871, however, teaches a solution to the problem of milling dental blanks made of a high degree of hardness by arranging the blank in a liquid and using a high speed abrasive tool to shape the blank under the surface of the liquid. Rostvall teaches that the method is particularly effective in milling hard dental ceramic blanks (page 2, lines 8-10). The ordinarily skilled artisan would have found it obvious to mill the Oden et al prior art ceramic blank after it has been hardened (fully sintered) by using the prior art Rostvall method of milling high degree of hardness ceramic dental blanks. One would have been motivated to do this in order to eliminate the recognized shrinkage problem.

Response to Applicant's Remarks.

Applicant argues with respect to Rostov, that the reference fails to teach whether the disclosed milling of ceramic blanks is done before or after the blank has been fully sintered as is claimed. The examiner notes that it is be presumed that the person reading the reference has at

Art Unit: 3732

least some basic knowledge in the art and would have recognized that ceramics that are not at least substantially fully sintered do not have high degrees of hardness and thus do not require such an elaborate underwater high speed milling process. Rostov clearly teaches a method for shaping high degree of hardness ceramic dental mill blanks, merely selecting old and known dental ceramics for use in the Rostov milling process would have been obvious to the ordinarily skilled artisan.

Action Made Final

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 3732

Prior Art

Applicant indicates that an information disclosure statement was filed on December 04, 2000. There is no record in the file wrapper of such a paper. The examiner is unable to consider the 1449 form because the foreign references listed on the submitted paper are not available.

Any inquiry concerning this communication should be directed to **Ralph Lewis** at telephone number **(703) 308-0770**. Fax (703) 872-9303. The examiner works a compressed work schedule and is unavailable every other Friday. The examiner's supervisor, Kevin Shaver, can be reached at (703) 308-2582.

R.Lewis
September 3, 2003

A handwritten signature in black ink, appearing to read 'R. Lewis', with a stylized flourish at the end.

Ralph A. Lewis
Primary Examiner
Au3732